Fluvial Processes in the Amazon Basin

Fluvial processes have had a large impact on the Amazon Basin. The process begins in the Andes Mountain Range where Orographic rainfall occurs. Because of the steep slopes of the Andes rivers and their tributaries erode vertically into the bed rock. The main types of erosion cause this are abrasion, hydraulic action. Abrasion occurs when sediment carried in the water comes into contact with the river bed and dislodges part of the river bed. Hydraulic action occurs when the force of the water loosens material in the river bed. Features that are created here include interlocking spurs, V-shaped valleys, rapids and waterfalls. This is made easier by the forces of freeze thaw and the erosion caused by the last glaciation (20 000 years ago)

This eroded material is then transported away down through the foothills of the Andes mountains onto the Amazon Basin. This occurs by traction (rolling), saltation (bouncing), Suspension (being carried) and solution (dissolved). At this time the erosion process of attrition also occurs where rocks in the water hit each other and become smaller.

As the Rivers (eg Amazon and Rio Grande) reach the Amazon Basin, the velocity of the water decreases. This means the rivers begin to lose their energy and hence, ability to carry their load. Because of this extensive deposition occurs. This happens over the whole expanse of the Amazon Basin, an area 3000km long and 1000km wide. It is this deposition that has built up the basin (aggradation) and resulted in the extensive flood plain we see today. The city of Iquitos, 3000km from the Amazon River mouth is only 100m above sea level. Depositional features such as the flood plain, the Amazon Delta, Meanders, ox bow lakes and levees are all found in the Amazon Basin.